CHEMICAL ANALYSIS OF CORROSIVE OXIDIZERS

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ABSTRACT

Instrumental techniques have been developed for the analysis of nitrogen tetroxide and chlorine trifluoride. Commercial NTO consists of N_2O_4, NO_2, N_2O_3, NO and H_2O (as HNO_3 and HNO_2). The applications of NMR spectrometry for the proton content and gas-solid chromatography for the nitrogen oxides content are described.

Quantitative analysis of chlorine trifluoride has been carried out by gas chromatography using a custom-built gas chromatograph with a specially prepared column containing Halocarbon oil on Kel-F. Special sampling techniques, sample handling, and sample introduction techniques are described. Retention times for F_2, CF_4, ClF , $FClO_3$, Cl_2, ClO_2, and ClF_3 have been determined. A near-infrared method is presented for the determination of HF in ClF_3.